



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/068,602

02/05/2002

Nobuyuki Kitazaki

JP920000456US1

8285

28722

7590

05/21/2004

BRACEWELL & PATTERSON, L.L.P.

P.O. BOX 969

AUSTIN, TX 78767-0969

EXAMINER

WONG, KIN C

ART UNIT

PAPER NUMBER

2651

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/068,602

Applicant(s)

KITAZAKI ET AL.

Examiner

K. Wong

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
    Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
    Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims (1-15) are rejected under 35 U.S.C. 102(b) as being anticipated by Dennison et al (4048660).

Regarding claim 1: Dennison et al discloses a disk drive apparatus (as depicted in figure 4 of Dennison et al), including:

a disk-like medium (element 10 in figure 1 of Dennison et al) for storing data;

a head (element 12 in figure 1) reads data from and writes data to the disk-like medium (see associated descriptions for details);

an actuator (element 60 in figure 5 and in col. 7, lines 42-63 where Dennison et al describes a position control which includes an actuator) which moves the head to a designated location on the disk-like medium; and

a position control unit (element 106 in figure 5) which positions the head by controlling a drive of the actuator (in col. 9, lines 44-68 where Dennison et al describes the position control of the head and the disk);

the position control unit (as depicted in figure 5) including:

a first integrator (element 168 in figure 5) which generates a first gain (in col. 12, lines 18-40 where Dennison et al describes the gain control of the integrators); and

a second integrator (element 156 in figure 5) which generates a second gain that is larger than the first gain (as depicted in figure 8 and see associated descriptions for details).

Regarding claim 2: Dennison et al depicted elements 156 and 168 in figure 5 that wherein the first integrator and the second integrator are connected in parallel.

Regarding claim 3: Dennison et al teaches that wherein the head performs a seek operation for moving to a designated location on the disk-like medium and a follow operation for reading or writing data staying at the location; the first integrator operates during the seek operation, and the second integrator operates during the follow operation (in col. 9, lines 44-68 of Dennison et al).

Regarding claim 4: Dennison et al teaches that wherein a switching unit is provided between the first integrator and the second integrator; the first integrator operates when the switching unit closes during the seek operation; and the second integrator or both first integrator and second integrator operate when the switching unit opens during the follow operation (in col. 10, lines 10-29 and col. 11, line 65 to col. 12, line 6 of Dennison et al).

Regarding claim 5: Dennison et al discloses a disk drive apparatus (as depicted in figures 4 and 5), including:

- a disk-like medium (element 10) for storing data;

- a head (element 62 in figure 4) which performs a seek operation for moving to a designated location on the disk-like medium and a follow operation for reading or writing data staying at the designated location (see col. 9, lines 44-68 of Dennison et al);

an actuator (element 60 in figure 5 and in col. 7, lines 43-48 where Dennison et al describes a position control which includes an actuator) which moves the head to the designated location on the disk-like medium; and

a position control unit (element 60 in figure 5 and see col. 9, lines 34-68 of Dennison et al) which positions the head by controlling an operation of the actuator;

wherein the position control unit (as depicted in figure 5) includes:

an integrator (element 168 in figure 5) which generates a corresponding first gain (in col. 12, lines 18-40) during the seek operation and a second gain different from the first gain during the follow operation (as depicted in figure 8 and see the associated descriptions for details).

Regarding claim 6: Dennison et al depicted in figure 8 that wherein the second gain (track following) is larger than the first gain (seek).

Regarding claim 7: Dennison et al teaches that wherein the integrator includes a first integrator which generates the first gain and a second integrator which generates the second gain (in col. 12, lines 18-40 of Dennison et al).

Regarding claim 8: Dennison et al teaches that wherein the integrator switches from the first gain to the second gain when a change from the seek operation to the follow operation takes place (in col. 11, line 65 to col. 12, line 6 of Dennison et al).

Regarding claims 9-11: method claims (9-11) are drawn to the method of using the corresponding apparatus claimed in claims 1-4. Therefore method claims (9-11) correspond to apparatus claims (1-4) and are rejected for the same reasons of anticipation as used above.

Regarding claim 12: Dennison et al discloses a hard disk drive (as depicted in figure 4 and see col. 1, lines 28-59 of Dennison et al), including:

a magnetic disk (element 10 – see col. 28-32 of Dennison et al) on which servo information is stored;

a magnetic head (element 62 in figure 5) which seeks the magnetic disk and reads or writes data staying at a designated location (see col. 1, lines 24-59 of Dennison et al);

an actuator (element 60 and in col. 7, lines 43-62 where Dennison et al describes a position control which includes an actuator) which moves the magnetic head to the designated location on the magnetic disk; and

a head position control unit (see col. 9, lines 34-68 of Dennison et al) which controls the position of the magnetic head based on the servo information read out by the magnetic head and which includes an integrator (see col. 9, lines 34-68 and col. 11, line 4 to col. 12, line 40 of Dennison et al);

wherein the integrator generates a first gain and a second gain larger than the first gain (as depicted in figure 8), the first gain (seek) being generated when the magnetic head does not read or write data and the second gain (track following) being generated when the magnetic head reads or writes data (see col. 1, lines 32-41 and col. 7, lines 6-39 of Dennison et al).

Regarding claim 13: Dennison et al teaches that wherein the first gain is generated when the magnetic head is seeking (in col. 12, line 62 to col. 13, line 9 and col. 12, lines 18-40 of Dennison et al).

Regarding claim 14: Dennison et al teaches that wherein the integrator is composed of a first integrator which generates the first gain and a second integrator which generates the second gain (in col. 7, lines 6-39, col. 9, lines 44-68 and col. 12, line 18 to col. 13, line 19 of Dennison et al).

Regarding claim 15: Dennison et al teaches that wherein the integrator generates the first gain and second gain, switching between them (in col. 10, lines 10-28 where Dennison et al describes the switching between the seek operation and the track following operation or switching between the gains of the integrators).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sidman (5187619) and Zhang (6140791) are cited for parallel integrators in the disk drive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Wong whose telephone number is (703) 305-7772.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Hudspeth can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 10/068,602


Page 7

Art Unit: 2651

you have questions on access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at 866-217-9197 (toll-free).

<sup>2</sup> kw

16 May 04



DAVID HUDSPETH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600